

US.Pat.Apl.Nr 10/759,164

Docket: 433-11US

Amended Claims
submitted January 2006

Claims now amended: 1,6,7,17

Claims now cancelled: 5

New claims now added: 20,21

Claim 1 (currently amended). Cage apparatus, wherein:

- [2] the apparatus includes a plurality of separate individual cages;
- [3] in respect of each one of the cages of the plurality:-
- [4] the individual cage is physically suitable for containing and transporting live poultry on a road-transport truck;
- [5] ~~[the cage includes a support framework, being of metal components including metal uprights and members, fixed together into an open rectangular configuration;]~~
the cage includes a support-framework, including uprights and cross-members fixed together in an open rectangular configuration;
- [6] the individual cage is of such length, width, and height dimensions that the plurality of cages can be stacked on the truck;
- [7] the individual cage is a sturdy, stand-alone, self-contained structure, whereby each individual cage, with poultry birds contained therein, is physically capable of being picked up as a unit, and of being lifted onto the truck as a unit;
- [8] ~~[the support framework is so configured as to define poultry-receiving trays, which are arranged in a plurality of rows of tray, and a plurality of columns of trays;]~~
the support-framework is so configured as to define poultry-receiving tray-chambers, which are arranged, in the cage, in a plurality of rows, and a plurality of columns;
- [9] ~~[in respect of each tray each cage:-]~~
in respect of each tray-chamber of each cage:-
- [10] ~~[the tray has a floor, left and right side panels, a roof panel, a rear closure panel, and a front door, which together define a rectangular chamber inside the tray;]~~
the tray-chamber is rectangular, being defined by a floor, left and right side panels, a roof panel, a rear closure panel, and a front door, of the support-framework;
- [11] the floor, left and right side panels, the roof panel, and the rear closure panel, are fixed into the support-framework, and remain so fixed throughout operation of the cage to load, unload,

and transport, the birds;

- [12] ~~[the front door is pivotable with respect to the framework, between an open position and a closed position;]~~

the front door is pivotable with respect to the support framework, between an open position and a closed position;

- [13] in the open position of the front door, poultry birds can pass into and out of the tray-chamber through the open door, and in the closed position of the front door, the tray-chamber is then closed, whereby poultry birds cannot pass into nor out of the tray-chamber of the support framework;

- [14] ~~[the rectangular chamber is so configured as to be suitable for receiving several poultry birds per tray;]~~

the tray-chamber is so configured as to be suitable for receiving several poultry birds therein;

- [15] ~~[at least one of the panels of the tray is of open lattice form, having openings of such large size and configuration that the chamber inside the tray can be characterised as light and well-ventilated, the openings being also of such small size and configuration as substantially to prevent the protrusion of body parts of the birds outside the tray;]~~

at least one of the panels of the tray-chamber is of open lattice form, having openings of such large size and configuration that the tray-chamber can be characterised as light and well-ventilated, the openings being also of such small size and configuration as substantially to prevent the protrusion of body parts of the birds outside the tray-chamber;

- [16] the floor of the tray includes a panel of plastic, and extends from the front to the rear, and from the left side to the right side, of the tray-chamber;

- [17] the panel of plastic has either no perforations, or, if having perforations, the perforations are so small that the foot of a poultry bird cannot enter therein;

- [18] ~~[with several poultry birds contained in the tray, the panel of plastic is of such form and robustness, and is so mounted in the support framework, that liquid entering the tray substantially cannot form pools, over substantially any portion of the upper surface of the floor panel with which the birds can come into contact]~~

the panel of plastic is of such form and robustness, and is so mounted in the support framework, that, with several poultry birds contained in the tray-chamber, liquid entering the tray-chamber substantially cannot form pools, over substantially any portion of the upper surface of the floor panel with which the birds can come into contact.

Claim 2 (original). Apparatus of claim 1, wherein the floor panel has a middle area, and front and rear end areas, and the floor panel is domed, in that the middle area lies at least 0.7" higher than a line

joining the front and rear end areas.

Claim 3 (original). Apparatus of claim 1, wherein the floor panel is formed with drainage slits, which are wide enough to permit liquids on the upper surface of the floor panel to drain through the floor panel, and are narrow enough to resist snagging the feet of birds.

Claim 4 (previously presented). Apparatus of claim 1, wherein each floor panel is a one piece moulding, and the support framework includes means for supporting each floor panel at the front thereof, at the rear, and in the middle, the floor panel being rigid enough that, when so supported, deflection of the floor panel due to the weight of poultry thereon is not enough to create pooling.

Claim 5 (cancelled).

Claim 6 (currently amended). Apparatus of claim 1, wherein ~~[the panels and the door of each tray are of plastic, to the extent that birds housed within the tray can rest in contact with only plastic material, and substantially cannot rest in contact with the said metal components]~~

- [2] the support-frame includes metal components;
- [3] the panels and the door are of plastic; and
- [4] the cage is so arranged that birds housed within the tray-chamber can rest in contact with only plastic material, and substantially cannot rest in contact with the metal components.

Claim 7 (currently amended). Apparatus of claim 1, wherein:

- [2] the apparatus includes a fence panel, which is a one-piece plastic moulding, of such height as to extend from top to bottom of the cage;
- [3] ~~[the fence panel is arranged to form a vertical wall for all the trays forming one column of trays;]~~
the fence panel is arranged to form a vertical wall for all the tray-chambers forming one column of tray-chambers;
- [4] the vertical fence panel is so arranged in relation to the uprights of the support framework as to be prevented from falling outwards relative to the cage by engagement with the said uprights;
- [5] ~~[the vertical fence panel is so arranged in relation to the floor panels of the trays in the column of trays as to be prevented from falling inwards relative to the cage by engagement with the said floor panels, whereby, but for the presence of the floor panels, the fence panel would fall inwards]~~
the vertical fence panel is so arranged in relation to the floor panels of the tray-chambers in the column of tray-chambers as to be prevented from falling inwards relative to the cage by

engagement with the said floor panels, whereby, but for the presence of the floor panels, the fence panel would fall inwards.

Claim 8 (previously presented). Apparatus of claim 7, wherein:

- [2] the fence panel is of rectangular form, having top, bottom, left, right edges;
- [3] substantially no points on the said edges protrude out from the support framework;
- [4] substantially all points on the said edges lie so close against the uprights and cross-members of the support-framework as to be protected thereby from contact with solid objects outside the cage.

Claim 9 (previously presented). Apparatus of claim 7, wherein the fence panels are of the said lattice form, the openings being defined by ribs, and being configured as deep, wide open boxes.

Claim 10 (previously presented). Apparatus of claim 9, wherein at a vertical location of the fence panel that lies just above one of the floor panels, the ribs defining the boxes are spaced vertically further apart than at other vertical locations of the fence panel, the wider spacing being such as to define a flushing port, to allow debris washed from inside the tray to be flushed out therethrough.

Claim 11 (previously presented). Apparatus of claim 17, wherein:

- [2] the support framework includes spaced-apart hinge-supports;
- [3] the apparatus includes bearings, arranged in the hinge-supports to guide the door for hinging rotation about a hinge-axis straddling between the hinge-supports, between the open position and the closed position;
- [4] the apparatus includes inter-acting cam faces, being a door-cam-face which is rotationally fast with the door, and a frame-cam-face which is rotationally fast with one of the hinge-supports;
- [5] the bearings are so structured that the said two cam faces can move axially relatively, and the cam faces are so structured as to remain in camming engagement during such axial movement;
- [6] the biasing means includes a spring, arranged to bias the cam faces towards each other;
- [7] the inter-acting cam faces are formed with respective complementary door-opening cam-slopes and respective complementary door-closing cam-slopes, these cam-slopes being so angled that axial movement of the cam faces is correspondingly accompanied by rotational movement of the door;
- [8] the cam-slopes are so arranged that, when the door is rotated away from its closed position, at first the door-closing cam-slopes engage, and the spring biases the door to rotate back towards its closed position, but when the door is rotated still further away from its closed position,

the cam-slopes go over-centre, whereby the door-closing cam-slopes disengage and the door-opening cam-slopes engage, and whereby the spring biases the door now to rotate towards its open position.

Claim 12 (original). Apparatus of claim 11, wherein:

- [2] the door-opening cam-slopes are steeper than the door-closing cam-slopes;
- [3] whereby the spring-induced door-closing force is greater than the spring-induced door-opening force.

Claim 13 (original). Apparatus of claim 11, wherein:

- [2] the inter-acting cam faces are formed with respective complementary door-open stop-faces and respective complementary door-closed stop-faces;
- [3] these stop-faces are so placed as to define the door-closed and door-open positions of the door;
- [4] the stop-faces lie in respective planes that lie substantially radially and axially relative to the hinge-axis.

Claim 14 (original). Apparatus of claim 11, wherein the cam faces are confined within a circumscribing circle, centred on the hinge axis, having a diameter of less than two inches.

Claim 15 (original). Apparatus of claim 11, wherein the surfaces of the cam that rub over each other during rotation of the door are provided with drainage channels, arranged so that water penetrating between the said surfaces cannot collect and remain therebetween, but drains away.

Claim 16 (original). Apparatus of claim 11, wherein the spring is a compression coil spring, concentric with the hinge axis.

Claim 17 (currently amended). ~~[Apparatus of claim 1, wherein the front door includes a spring-biasing means, which is effective to bias the door towards the open position with such a biasing force that the door automatically opens, against the biasing force, when the cage is tipped, by the weight of birds pressing against the door].~~

Apparatus of claim 1, wherein the front door includes a spring-biasing means, which is effective to bias the door towards the closed position with a biasing force of such small magnitude that the door automatically opens, against the biasing force, when the cage is tipped, by the weight of birds pressing against the door.

Claim 18 (previously presented). Apparatus of claim 1, wherein each individual cage of the plurality is of such length, width, and height dimensions that the plurality of cages can be stacked two high on the truck.

Claim 19 (previously presented). Apparatus of claim 1, wherein:

- [2] the support framework of the cage includes sockets for receiving the forks of a fork lift truck; and
- [3] the sockets are sturdily integrated into the support framework of the cage, whereby the individual cage can be raised and transported by a fork lift truck.

Claim 20 (new). Apparatus of claim 17, wherein the said biasing force is of such large magnitude that the door remains closed unless the cage is tipped in such manner that birds inside the tray-chamber fall against the front door.

Claim 21 (new). Apparatus of claim 1, wherein:

- [2] the spring-biasing means is arranged to be effective to bias the door towards the closed position only when the door is at, or almost at, the closed position; and
- [3] the spring-biasing means is arranged to be effective to bias the door towards the open position only when the door is at, or almost at, the open position.